

Appl. No. 10/034,205  
Reply to Office Action of: March 24, 2005

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1. (currently amended) A method of transmitting data over a fibre-optic channel, said data comprising multi-valued bits each having one of at least three possible values, said method comprising:
  - a) establishing a respective optical characteristic corresponding to each of said possible values; and
  - b) for each multi-valued bit of said data, transmitting a pulse having the optical characteristic corresponding to the value of said multi-valued bit; each said pulse being transmitted by powering a laser corresponding to a respective mode, each mode corresponding to a respective one of said values, and said lasers being powered by a laser driver operating to power the respective laser corresponding to the respective mode.
2. (original) A method according to claim 1, wherein said optical characteristic comprises wavelength.
3. (original) A method according to claim 2, wherein said optical characteristic further comprises amplitude modification.
4. (original) A method according to claim 1, wherein said optical characteristic comprises polarization.
5. (currently amended) A method according to claim [[2]] 4, wherein said optical characteristic further comprises amplitude modification.
6. (original) A method according to claim 1, wherein said optical characteristic comprises phase angle.

BEST AVAILABLE COPY

Appl. No. 10/034,205

Reply to Office Action of: March 24, 2005

7. (currently amended) A method according to claim [[2]] 6, wherein said optical characteristic further comprises amplitude modification.
8. (currently amended) An optical encoder for transmitting data over a fibre-optic channel, said data comprising multi-valued bits each having at least three possible values, said optical encoder comprising:
  - a) a control;
  - b) a laser driver operated by said control, and providing a mode corresponding to each of said possible values;
  - c) at least one laser connected to said laser driver, said at least one laser comprising a laser for each mode, said laser driver operating in a respective mode by powering the laser corresponding to the respective mode; and
  - d) an optical multiplexer connected to each of said at least one laser driver; said control being configured to receive said data, process each multi-valued bit thereof, and operate said laser driver in the mode corresponding to each multi-valued bit of the data and thereby transmit said data.
9. (cancel)
10. (original) An optical encoder according to claim 8, wherein said at least one laser provides a wavelength corresponding to each mode, and said laser driver operates in a respective mode by operating the laser at the corresponding wavelength.
11. (currently amended) An optical encoder according to claim 8, further comprising:
  - a) a plurality of filters coupled to said laser, each of said filters corresponding to a respective mode; and
  - b) a plurality of electronic switches each corresponding to a respective one of the filters; [[and]]  
[[c] an]] wherein said optical multiplexer is coupled to the switches; said laser driver operating in a respective mode by operating the switch corresponding to the respective mode

BEST AVAILABLE COPY

Appl. No. 10/034,205

Reply to Office Action of: March 24, 2005

to provide a signal corresponding to the respective filter to said optical multiplexer.

12. (new) An optical encoder for transmitting data over a fibre-optic channel, said data comprising multi-valued bits each having at least three possible values, said optical encoder comprising:

- a) a control;
- b) a laser driver operated by said control, and providing a mode corresponding to each of said possible values;
- c) at least one laser connected to said laser driver;
- d) an optical multiplexer connected to each of said at least one laser;
- e) a plurality of filters coupled to said laser, each of said filters corresponding to a respective mode; and
- f) a plurality of electronic switches each corresponding to a respective one of the filters, said optical multiplexer being coupled to the switches;

wherein said laser driver operates in a respective mode by operating the switch corresponding to the respective mode to provide a signal corresponding to the respective filter to said optical multiplexer; and said control being configured to receive said data, process each multi-valued bit thereof, and operate said laser driver in the mode corresponding to each multi-valued bit of the data and thereby transmit said data.

BEST AVAILABLE COPY